

INFORMATION DISCLOSURE CITATION

Applicant: Kui-Chiu KWOK

Title: "Meltblowing Method and Apparatus"

Serial No.:

Group: 1732

Filing Date: 18 March 2000

L. Tentoni

3530 U.S. PTO
09/528357

09/10/00

U.S. PATENTS & APPLICATIONS

Initial *		Document Number	Date	Inventors	Class	Sub class Filing D.
185	AA	R E 3 3 4 8 1	11 Dec 90	Zejcker et al.	239	298
	AB	2 2 1 2 4 4 8	20 Aug 40	Modigliani	65	2064
	AC	2 2 9 7 7 2 6	2 Apr 42	Stephanoff	34	361
	AD	2 6 2 8 3 8 6	17 Feb 53	Tornberg	425	190
	AE	3 2 1 3 1 7 0	19 Oct 65	Erdmenger et al.	264	142
	AF	3 3 3 4 7 9 2	8 Aug 67	DeVries et al.	425	87
	AG	3 4 8 8 8 0 6	13 Jan 70	De Cecco et al.	425	463
	AH	3 6 5 0 8 6 6	21 Mar 72	Prentice	264	345
	AI	3 7 0 4 1 9 8	28 Nov 72	Prentice	428	198
	AJ	3 7 5 5 5 2 7	28 Aug 73	Keller et al.	264	518
	AK	3 8 2 5 3 7 9	23 Jul 74	Lohkamp et al.	425	72.2
	AL	3 8 4 9 2 4 1	19 Nov 74	Butin et al.	428	137
	AM	3 8 6 1 8 5 0	21 Jan 75	Wallis	425	461
	AN	3 8 7 4 8 8 6	1 Apr 75	Levecque et al.	561	35
	AO	3 9 2 0 3 6 2	18 Nov 75	Bradt	425	72.2
	AP	3 9 4 2 7 2 3	9 Mar 76	Langdon	239	135
	AQ	3 9 4 7 5 3 7	30 Mar 76	Buntin et al.	264	137
	AR	3 9 7 0 4 1 7	20 Jul 76	Page	425	72.2
	AS	3 9 7 8 1 8 5	31 Aug 76	Buntin et al.	264	518
	AT	4 0 1 5 9 6 3	5 Apr 77	Levecque et al.	65	467
	AU	4 0 1 5 9 6 4	5 Apr 77	Levecque et al.	65	467
	AV	4 0 5 0 8 6 6	27 Sep 77	Kilsdonk	425	192
	AW	4 0 5 2 1 8 3	4 Oct 77	Levecque et al.	65	450
	AX	4 1 0 0 3 2 4	11 Jul 78	Anderson et al.	442	344
	AY	4 1 4 5 1 7 3	20 Mar 79	Pelzer et al.	425	224
✓	AZ	4 1 8 9 4 5 5	19 Feb 80	Raganato et al.	264	12

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Initial *		Document Number	Date	Inventors	Class	Subclass Filing Date
120	AA	4 2 7 7 4 3 6	7 Jul 81	Shah et al.	264	518
1	AB	4 3 0 0 8 7 6	17 Nov 81	Kane et al.	425	66
	AC	4 3 4 0 5 6 3	20 Jul 82	Appel et al.	264	518
	AD	4 3 5 9 4 4 5	16 Nov 82	Kane et al.	264	518
	AE	4 3 8 0 5 7 0	19 Apr 83	Schwarz	442	350
	AF	4 5 2 6 7 3 3	2 Jul 85	Lau	264	12
	AG	4 6 4 5 4 4 4	24 Feb 87	Lenk et al.	425	1925
	AH	4 7 0 8 6 1 9	24 Nov 87	Balk	348	351
	AI	4 7 8 5 9 9 6	22 Nov 88	Ziecker et al.	239	29.8
	AJ	4 8 1 8 4 6 3	4 Apr 89	Buehning	264	40.1
	AK	4 8 1 8 4 6 4	4 Apr 89	Lau	264	510
	AL	4 8 8 9 4 7 6	26 Dec 89	Buehning	425	72.2
	AM	4 9 2 3 7 0 6	8 May 90	Binley et al.	425	72.2 516
	AN	4 9 8 3 1 0 9	8 Jan 91	Miller et al.	425	7
	AO	4 8 7 4 4 5 1	17 Oct 89	Boger et al.	156	291
	AP	5 0 6 6 4 3 5	19 Nov 91	Lorenz et al.	425	40.5
	AQ	5 0 9 8 6 3 6	24 Mar 92	Balk	264	555
	AR	5 1 4 5 6 8 9	8 Sep 92	Allen et al.	425	72.2
	AS	5 1 6 5 9 4 0	24 Nov 92	Windley	425	72.2
	AT	5 2 6 9 6 7 0	14 Dec 93	Allen et al.	425	72.2
	AU	5 4 2 1 9 2 1	6 Jun 95	Gill et al.	156	62.4
	AV	5 4 4 5 5 0 9	29 Aug 95	Allen et al.	425	72.2
	AW	5 4 5 8 7 2 1	17 Oct 95	Rateman	239	423
	AX	5 4 5 8 2 9 1	17 Oct 95	Brusko et al.	156	291
	AY	5 4 7 8 2 2 4	26 Dec 95	McGuffey	425	7
✓	AZ	5 5 4 0 8 0 4	30 Jul 96	Rateman	156	500

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Joseph S. Del Sole

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Exr. L. Tentoni

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U.S. PATENTS & APPLICATIONS

Initial		Document Number	Date	Inventor	Class	Subclass Filing Date
Y	AA	R E 3 3 1 5 8	6 Feb 90	Stouffer et al.	239	589.1
	AB	R E 3 3 1 5 9	6 Feb 90	Bauer	239	589.1
	AC	R E 3 3 4 4 8	20 Nov 90	Bauer	239	11
	AD	R E 3 3 6 0 5	4 Jun 91	Bauer	239	589.1
	AE	4 0 0 7 6 2 5	15 Feb 77	Houben et al.	239	24.01
	AF	4 0 5 2 0 0 2	4 Oct 77	Stouffer et al.	239	4
	AG	4 1 5 1 9 5 5	1 May 79	Stouffer	239	11
	AH	4 5 9 6 3 6 4	24 Jun 86	Bauer	239	589.1
	AI	4 6 9 4 9 9 2	22 Sep 87	Stouffer	239	265.23
	AL	4 9 0 5 9 0 9	6 Mar 90	Woods	239	589.1
		4 9 5 5 5 4 7	11 Sep 90	Woods	239	589.1
		5 0 3 5 3 6 1	30 Jul 91	Stouffer	239	589.1
V		5 1 2 9 5 8 5	14 Jul 92	Bauer	239	589.1

FOREIGN PATENTS & PUBLICATIONS

	Document Number	Date	Country	Class	Translation Yes No
AM	7 5 6 9 8 7	12 Sep 56	Great Britain		
AN	1 3 9 2 6 6 7	30 Apr 75	Great Britain		
AO	W 9 1 5 8 9 5	19 Aug 93	PCT		
O	3				

OTHER DOCUMENTS (Author, Title, Date and Pages)

AP	Nonwovens World Magazine, "Meltblown Technology Today", 1989, pages 1-158.
AS	The New Non-Wovens World, "Developments in Melt Blowing Technology", Summer 1993, pages 73-82.
AT	

EXAMINER: *Joseph S. Lee*

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**INFORMATION
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Applicant: Kui-Chiu KWOK

Title: "Meltblowing Method and Apparatus"

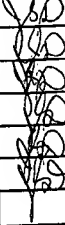
Appl. No.: 09/528,357

Art Unit 1732.

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U.S. PATENTS & APPLICATIONS

U.S. PATENTS & APPLICATIONS												
Initial *	Document Number							Date	Inventor	Class	Subclass Filing Date	
	AA	5	0	6	9	8	5	3	3 Dec 91	Miller	264	176.1
	AB	5	0	9	4	7	9	2	10 Mar 92	Baran	264	171.17
	AC	5	2	6	0	0	0	3	9 Nov 93	Nyssen et al.	264	6
	AD	5	4	2	1	9	2	1	6 Jun 95	Gill et al.	156	62.4
	AE	5	5	0	3	7	8	4	2 Apr 96	Balk	264	40.3
	AF	5	6	7	9	3	7	9	21 Oct 97	Fabbicante et al.	423	7
	AG											
	AH											
	AI											
	AL											

FOREIGN PATENTS & PUBLICATIONS

	Document Number	Date	Country	Class	Translation Yes No
AM	4 4 1 6 1 6 8	Jul 69	Japan		
AN					
AO					
AP					
AQ					

OTHER DOCUMENTS (Author, Title, Date and Pages)

AR	Gregory F. Ward, "Micro-Denier Nonwoven Process and Fabrics", on or about 17 Oct 97, pgs. 1-9.
AS	
AT	

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U.S. PATENTS & APPLICATIONS

Initial *		Document Number	Date	Inventors	Class	Subclass Filing Date
190	AA	2 0 3 1 3 8 7	30 Nov 34	Schwarz	425	463
	AB	3 0 3 8 2 0 2	12 Jun 62	Harkenrider	425	464
	AC	3 1 7 6 3 4 5	6 Apr 65	Powell	425	131.5
	AD	3 1 7 8 7 7 0	20 Apr 65	Willis	425	76
	AE	3 1 9 2 5 6 2	6 Jul 65	Powell	425	131.5
	AF	3 1 9 2 5 6 3	6 Jul 65	Crompton	425	462
	AG	3 2 0 4 2 9 0	7 Sep 65	Crompton	425	190
	AH	3 2 5 3 3 0 1	31 May 66	McGlaughlin	425	461
	AI	3 3 8 0 1 2 8	30 Apr 68	Cremer et al.	425	382R
	AJ	3 4 9 2 6 9 2	3 Feb 70	Soda et al.	264	209.2
	AK	3 5 0 1 8 0 5	24 Mar 70	Douglas, Jr. et al.	425	131.5
	AL	3 6 1 3 1 7 0	19 Oct 71	Soda et al.	425	463
	AM	3 9 2 3 4 4 4	2 Dec 75	Esper et al.	425	461
	AN	3 9 8 1 6 5 0	21 Sep 76	Page	425	72.2
	AO	4 1 8 5 9 8 1	29 Jan 80	Ohsato et al.	65	466
	AP	4 4 5 7 6 8 5	3 Jul 84	Huang et al.	425	461
	AQ	4 6 5 2 2 2 5	24 Mar 87	Dehennau et al.	425	133.1
	AR	4 7 4 6 2 8 3	24 May 88	Hobson	425	528
	AS	4 7 4 7 9 8 6	31 May 88	Chao	264	176.1
	AT	4 8 1 2 2 7 6	14 Mar 89	Chao	264	172.1
	AU	4 8 1 8 4 6 4	4 Apr 89	Lau	264	510
192	AV	5 0 1 3 2 3 2	7 May 91	Way	425	192R
193	AW	5 0 6 7 8 8 5	26 Nov 91	Stevenson et al.	425	131.1

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Art Unit 1732

U.S. PATENTS & APPLICATIONS

Initial		Document Number	Date	Inventor	Class	Subclass Filing Date
✓ 20	AA	4 9 4 9 6 6 8	21 Aug 91	Heindel et al.	118	314
	AB	4 9 8 3 1 0 9	8 Jan 91	Miller et al.	425	7
	AC	5 0 1 7 1 1 6	21 May 91	Carter et al.	425	131.5
	AD	5 1 4 5 6 8 9	8 Sep 92	Allen et al.	425	72.2
	AE	5 2 6 9 6 7 0	14 Dec 93	Allen et al.	425	72.2
	AF	5 3 4 2 6 4 7	30 Aug 94	Heindel et al.	427	231
	AG	5 3 5 4 3 7 8	11 Oct 94	Hauser et al.	118	696
	AH	5 4 0 9 7 3 3	25 Apr 95	Boger et al.	427	96
	AI	5 4 1 8 0 0 9	23 May 95	Rateman et al.	427	207.1
	AJ	5 4 2 1 9 4 1	6 Jun 95	Allen et al.	156	244.11
	AK	5 4 2 3 9 3 5	13 Jun 95	Benecke et al.	156	291
	AL	5 4 2 9 8 4 0	4 Jul 95	Rateman et al.	427	256
	AM	5 4 4 5 5 0 9	29 Aug 95	Allen et al.	425	72.2
	AN	5 5 2 4 8 2 8	11 Jun 96	Rateman et al.	239	413
	AO	5 5 3 3 6 7 5	9 Jul 96	Benecke et al.	239	413
	AP	5 6 0 5 7 0 6	25 Feb 97	Allen et al.	425	72.2
✓	AQ	5 6 2 0 1 3 9	15 Apr 97	Ziecker	239	124

FOREIGN PATENTS & PUBLICATIONS

		Document Number	Date	Country	Class	Translation Yes No
	AR					

OTHER DOCUMENTS (Author, Title, Date and Pages)

AS	
EXAMINER:	Joseph S. J. Sob
DATE CONSIDERED:	9/5/03

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Art Unit 1732

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**SUPPLEMENTAL
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APR 06 2000

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Appl. No.: 09/528,357

Exe. L. Tentoni

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U.S. PATENTS & APPLICATIONS

Initial*		Document Number							Date	Inventor	Class	Subclass Filing Date
JS	AA	3	8	0	6	2	8	9	1974	Schwarz	425	72.2
JS	AB	3	9	5	4	3	6	1	1976	Page	425	72.2
JS	AC	5	4	7	6	6	1	6	Dec. 1995	Schwarz	264	6
	AD											
	AE											
	AF											
	AG											
	AH											
	AI											
	AJ											
	AK											

FOREIGN PATENTS & PUBLICATIONS

		Document Number							Date	Country	Class	Translation Yes No
JS	AL	W 0 0 2	0	7	1	2	2		1992	WIPO Publication		
	AM											
	AN											
	AO											
	AP											

OTHER DOCUMENTS (Author, Title, Date and Pages)

	AQ	
	AR	
	AS	

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SECOND SUPPLEMENTAL INFORMATION DISCLOSURE CITATION

Applicant: KWOK

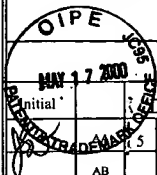
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U.S. PATENTS & APPLICATIONS

Initial	Document Number	Date	Inventor	Class	Subclass Filing Date
AB	5 3 1 2 5 0 0	1994	Kurihara et al.	136	62.4
AC					
AD					
AE					
AF					
AG					
AH					
AI					
AJ					
AK					

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	Document Number	Date	Country	Class	Translation Yes No
AL	1 97 1 5 7 4 0	1998	Germany		
AM					
AN					
AO					
AP					

OTHER DOCUMENTS (Author, Title, Date and Pages)

AQ	
AR	
AS	

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JUN 18 2001

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Examiner L. L. L. L.

Filing Date: 18-March-2000

Art Unit 1790

U.S. PATENTS & APPLICATIONS

Initial		Document Number							Date	Inventor	Class	Subclass
130	AA	6	2	3	5	1	3	7	May 2001	Van Eperen et al.	156	22 Aug 1998 176
131	AB	5	9	6	4	9	7	3	1999	Heath	156	161
132	AC	5	2	7	5	6	7	6	1994	Rooyakkers et al.	156	164
133		4	9	6	0	6	1	9	1990	Slautterback et al.	427	265
134	AD	4	8	4	4	0	0	3	1989	Slautterback et al.	123	383
135	AE	4	8	4	2	6	6	6	1989	Werenicz	156	161
136	AF	4	7	1	1	6	8	3	1987	Merkatoris	156	164
	AG											
	AH											
	AI											
	AL											

FOREIGN PATENTS & PUBLICATIONS

		Document Number							Date	Country	Class	Translation Yes No	
	AM												
	AN												
	AO												
	AP												
	AQ												

OTHER DOCUMENTS (Author, Title, Date and Pages)

137	AR	Today's Idea, "Nordson Unveils Diaper Elastic System", October 1988, 1 pg.										
138	AS	Nordson, "Adhesive And Powder Application Systems For the Non-Wovens Industry", 1992, 7 pgs.										
	AT											

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U.S. PATENTS & APPLICATIONS

Initial*		Document Number							Date	Inventor	Class	Subclass Filing Date
JSS	AA	5	6	6	7	7	5	0	1997	Nohr	264	555
	AB											
	AC											
	AD											
	AE											
	AF											
	AG											
	AH											
	AI											
	AJ											
	AK											

FOREIGN PATENTS & PUBLICATIONS

		Document Number							Date	Country	Class	Translation Yes No
JSS	AL	W	9	1	5	8	9	5	1993	WIPO Publication		
JSS	AM	-	7	5	6	9	0	7	1956	UK		
JSS	AN	1	3	9	2	6	6	7	1975	UK		
	AO											
	AP											

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AQ	
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